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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/033,503

12/27/2001

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2001-028-NSC (STK  
01028 P

8645

7590

07/21/2004

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EXAMINER

FERNANDES, CHERYL M

ART UNIT

PAPER NUMBER

2171

8

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/033,503

Applicant(s)

KAVURI ET AL.

Examiner

Cheryl M Fernandes

Art Unit

2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6 and 7</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by US

Publication Number 2003/0236945,A1 by Nahum.

2. Referring to claims 1, 6, 11, and 16, Nahum discloses virtual volume management systems and methods (Abstract; para. 1, 11, 14, 27, 57, and 60) comprising:

- a storage area network ('SAN', para. 11, 14, 57, and 60) comprising a plurality of storage devices ('array of storage devices', para. 11, 14, 57, and 60; 'physical storage devices', para. 64, Fig. 1, element 4) and a plurality of virtual storage volumes available to a user for use in storage and retrieval of user data ('virtual volumes', para. 13, 57), the plurality of storage devices comprising first and second sets of storage devices, wherein the first set of storage devices is of a type different than the second set of storage devices ('different physical storage devices, para. 64); and

- a controller ('Storage Virtualization Manager (SVM)', Abstract; para, 57-61, 68, ) for:

automatically allocating at least two of the plurality of storage devices to the pool ('Storage Manager module' (Fig. 4, element 50) para. 102, 105-109; 'SVM GUI', para. 110-112, 114, 116)<sup>1</sup>, and

linking at least one of the plurality of virtual storage volumes to the pool (para. 112)<sup>2</sup>, wherein the controller:

partitions the at least two of the plurality of storage devices for storage of user data thereto and retrieval of user data therefrom ('Create Storage Pool' menu, para. 111)<sup>3</sup>; and

concatenates the at least two of the plurality of storage devices for storage of user data thereto and retrieval of user data therefrom ('addition of devices to pool', para. 9, 111)<sup>4</sup>.

3. Referring to claims 2, 7, 12, and 17, Nahum discloses that the plurality of storage devices contain at least one physical disk ('physical Disk Arrays', para. 64).

4. Referring to claims 3, 8, 13, and 18, Nahum discloses that the plurality of storage devices comprises at least one redundant array of independent disks ('RAID' devices, para. 64).

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<sup>1</sup> The API1 and API2 application program interfaces of para. 114 and 116 contain functions parallel to every function available by the GUI of para. 111. Examiner thereby asserts that the functions that the GUI provides are performed automatically by the API1 and API2 application program interfaces.

<sup>2</sup> The GUI of the Storage Virtualization Manager contains a Virtual Volume Menu whereby the Virtual Volumes are linked to a storage pool.

<sup>3</sup> The Create Storage Pool menu allows for the choosing of devices that will be part of the storage pool, thereby allowing for the partitioning of devices when allocating to the pool.

<sup>4</sup> Additional devices are added to the Storage pool of concatenated devices (refer to para. 9).

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5. Referring to claims 4, 9, 14, and 19, Nahum discloses that the plurality of storage devices comprises at least one virtual storage volume (para. 57).

6. Referring to claims 5, 10, 15, and 20, Nahum discloses that the at least one virtual storage volume comprises at least one virtual disk (para. 122).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents or publications are cited with respect to systems for managing virtual storage and data storage devices:

- US Patent Number 5,758,050 issued to Brady et al (col. 1, line 54-col. 7, line 60);
- US Patent Number 6,745,207 B2 issued to Reuter et al (col. 1-3, 5, 7-9, 11).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl M Fernandes whose telephone number is (703) 305-3917. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (703) 308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 14, 2004  
CMF

  
WAYNE AMSBURY  
PRIMARY PATENT EXAMINER